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An AIDS Primer For Helping Professionals And Educators

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An AIDS Primer for Helping Professionals and Educators

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AADAC
ALBERTA ALCOHOL AND DRUG ABUSE COMMISSION
AN AGENCY OF THE GOVERNMENT OF ALBERTA

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Acknowledgements

In 1985 the Alberta Alcohol and Drug Abuse Commission (AADAC) recognized the importance of the disease AIDS and the need to train its staff to deal constructively and safely with AIDS patients and high risk clients. AADAC produced an AIDS Resource Manual, which includes a detailed protocol for handling HIV infections in AADAC facilities, and initiated a staff training program. AADAC also recognized that new knowledge was appearing almost daily and accordingly made a commitment to produce periodic information updates. The information collected and reviewed to date has been consolidated into this publication which AADAC believes will be a valuable resource for other helping professionals and educators.

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1. Summary

Introduction

AIDS (Acquired Immune Deficiency Syndrome) is a viral infection which causes severe depression of the immune system resulting in the development of life-threatening infections and/or cancers. Also, the effects of the virus on the nervous system can cause dementia.

The AIDS virus (HIV – Human Immunodeficiency Virus) also causes a spectrum of diseases less severe than full blown AIDS. However, with time, a significant number of people with the less severe diseases develop AIDS.

Diagnosis

The diagnosis of AIDS requires the presence of clinical features such as specific infections and cancers, as well as a positive lab test for HIV antibodies. Pneumocystis carinii pneumonia is the most common infection associated with AIDS and Kaposi's sarcoma the most common cancer.

Some persons infected with HIV have no symptoms. Others have symptoms, but do not meet the criteria for the diagnosis of AIDS, and were previously diagnosed as having AIDS-Related Complex (ARC). A detailed medical classification of HIV infections is now being employed. Symptoms of HIV infection include: extreme malaise and fatigue, fever, night sweats, weight loss, diarrhea and enlarged lymph nodes.

In 1986, the U.S. National Academy of Sciences estimated that 25 to 50% of people with early HIV infections will develop AIDS.

The commonly available lab test only indicates exposure to the virus, and is not a test for AIDS. Most persons with a positive test *probably* carry the virus and can transmit the infection.

Methods of Transmission

HIV is transmitted primarily by sexual contact. However, unlike most sexually transmitted diseases it requires a specific means of entry into the blood stream. This can occur through abrasions and tissue tears.

The other major method of transmission is the shared use of infected needles and syringes by intravenous drug users. This activity provides direct access to the blood, as does the administration of infected blood transfusions.

There is no evidence that AIDS is transmitted by ordinary social or occupational contact. Also, current evidence indicates it is not transmitted by insects.

Risk Groups

Homosexual and bisexual men are the group best delineated and at highest risk to contract AIDS. Intravenous drug users are the other main high risk group.

Heterosexual partners of infected persons are also at high risk, as are children born to infected mothers. Persons who received blood products and blood transfusions before testing for AIDS was instituted are at a much lower risk.

The risk to the general heterosexual population in North America is low but cannot be ignored, as extensive future spread could occur.

Prevalence

November 1987: Cases of AIDS reported: Canada – 1,345, United States – 44,757. Homosexual and bisexual men account for approximately 82% of cases in Canada and 73% in the U.S. Intravenous drug users: 0.4% in Canada, greater than 16% in the U.S.

Projected number of AIDS cases in 1991: Canada – 6,500, U.S. – 270,000.

Estimates of number of persons infected with HIV in 1987: U.S. – 2 million, world – 5 to 10 million. Projected estimates for 1991: U.S. – 5 to 10 million, world – 100 million.

Treatment

Current approaches to the treatment of HIV infections include: antiviral therapy, attempts to stimulate the immune system, and treatment of specific malignancies and infections. With or without treatment, in 1987, AIDS continued to be a fatal disease.

Several antiviral drugs have shown promise, including zidovudine (formerly named azidothymidine or AZT).

Prevention

Despite the considerable research that is in progress, an HIV vaccine will probably not be available before the 1990's.

Until a vaccine becomes available, the only prevention against AIDS is to avoid coming in contact with the virus. Governments are placing increasing emphasis on informing the public (heterosexual as well as homosexual) about the importance of the use of condoms during sexual intercourse. As well, intravenous drug users are being encouraged to use clean, previously unused needles and syringes.

AIDS and Health Care Professionals

AIDS patients can be dealt with safely and sensitively by knowledgeable health care workers. The infectious nature of the syndrome, however, calls for strict compliance with infectious control procedures.

The most likely method of transmission would be by contact with blood and other body fluids. The precautions recommended for hepatitis B patients should be followed.

2. Introduction

2.1 Definition of AIDS

AIDS (Acquired Immune Deficiency Syndrome) is a viral infection which causes severe depression of the immune system resulting in the development of life-threatening infections and/or cancers. Although various treatments are being studied, AIDS is still a fatal disease. Most patients die during the three years following diagnosis (National Advisory Committee on AIDS, 1985).

Not all individuals exposed to the virus develop AIDS. Some do not develop symptoms while others develop less severe forms of infection which until recently were diagnosed as AIDS-Related Complex (ARC). A detailed medical classification of AIDS virus infections is now being employed (see Appendix A).

AIDS was first reported in Canada in February 1982, eight months after the disease was described in the United States. There have been many hypotheses regarding the origin of AIDS; current information suggests a possible origin in the African green monkey which carries a virus very similar to the AIDS virus (Lagone, 1985).

2.2 The AIDS Virus (HIV)

AIDS is caused by the Human Immunodeficiency Virus (HIV).[1] The virus has been found in blood, semen, breast milk, urine; in small amounts in saliva and tears (Lagone, 1985); and in various other body fluids and tissues.

It is now known how HIV acts in the body. Upon entering the blood stream the virus seeks out and enters T-4 lymphocytes (white blood cells that stimulate the immune system to produce antibodies). The viral material, consisting of RNA (ribonucleic acid), is converted to DNA (deoxyribonucleic acid) by an enzyme in the virus. The T-4 cell then inserts the viral DNA into its chromosomes. In this form, the virus may remain dormant inside the T-4 cell for weeks, months or even years. Once activated, the AIDS DNA directs the T-4 cell to make copies of the virus. These new AIDS viruses bud off from the surface of the T-4 cell which eventually dies. This process, in which the virus takes over control of the T-4 cell, is referred to as TAT (TransActional Transcriptional regulation). It speeds up virus growth enormously. As more and more T-4 cells are destroyed, the immune system becomes severely depressed (Lagone, 1985).

The AIDS virus also directly attacks other cells, particularly those in the brain and peripheral nervous system (Med. Post, 1985b). In addition, HIV may cause inflammation of muscles, and weakness may be an early feature of infection (Med. Post, 1986j).

2.3 HIV and the Nervous System

HIV has been isolated from the spinal fluid and nerve tissues of patients with AIDS-related nervous system diseases. These diseases (e.g.: meningitis, dementia) may occur before or in the absence of HIV-related immunodeficiency (Schlech, 1986; Med. Post, 1986p; 1986q). Since mental functions such as rational decision making may be disturbed, these patients could require specialized psychosocial care at certain stages in their illness. Such care may be necessary to protect them, as well as prevent further spread of the virus.

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[1] Previous names for the AIDS virus include: HTLV-III (Human T-Cell Lymphotropic Virus type III), LAV (Lymphadenopathy Associated Virus), and ARV (AIDS Related Virus).

The psychiatric effects of HIV infection, such as psychosis and depression, probably cause significant disability in AIDS patients (Med. Post, 1985a; 1985d). Also, it has been suggested that the central nervous system may serve as a sanctuary for the virus (Ho et al., 1985).

2.4 Cofactors

Researchers are still looking for cofactors (essential events accompanying exposure to HIV) in the *development of AIDS.* Although race, age, infection with other viruses, and drug taking have all been implicated, no specific cofactor has been identified (Can. Med. Assoc. J., 1986a; Schechter et al., 1985). The authors of a recent report from the Vancouver Lymphadenopathy-AIDS Study conclude that "most lifestyle variables (such as: lifetime number of male sexual partners, frequency of receptive anal intercourse, illicit drug abuse or history of infectious disease) appear to act as *exposure* factors in HIV infection but not as cofactors in the development of AIDS" (Boyko et al., 1986).

Lab studies do suggest that other viruses may assist HIV in replication. However, the length of infection is the only identified factor that predicts what will happen to *infected* patients. The longer the duration of the infection with HIV, the more likely AIDS is to develop (Med. Post, 1986z).

2.5 Immunodeficiency

Whereas HIV causes *acquired* immunodeficiency syndrome (AIDS), a comparable immunodeficiency syndrome can be present from birth (e.g.: the Texas "boy in the bubble"). Patients with AIDS, and those with a severe form of immune deficiency present from birth, exhibit a similar variety of infections and severity of illness (Lauzon et al., 1986).

A type of acquired immunodeficiency is a side-effect of drugs used in cancer treatment. Also, drugs with immunodepressant properties (e.g.: cyclosporine) are used to facilitate organ transplant surgery because they depress the immune response which is the cause of tissue rejection.

3. Diagnosis

The AIDS virus (HIV) causes a wide spectrum of illness, of which AIDS is the end stage. In addition to a positive blood test for HIV antibodies, specific criteria have been established to differentiate the various conditions.

3.1 HIV Infections

Differentiation of conditions resulting from HIV infection has been confusing (Shahmanesh, 1986). The detailed medical classification currently in use is summarized in Appendix A. However, the previously used terms – AIDS, AIDS Related Complex (ARC), and asymptomatic – are still commonly used.

i) Definition of AIDS

To ensure uniformity of reporting, in 1985 the U.S. Centers for Disease Control issued a definition of AIDS that required clinical confirmation of an AIDS-associated disease. The diseases (infections and cancers) considered predictive of AIDS are listed in Appendix B.

In 1987, the definition was widened to include several new criteria (Med. Post, 1987c). These included: dementia/encephalopathy in patients with HIV infection. This is defined as disabling cognitive and/or motor dysfunction interfering with work or activities of daily living. The widened definition also included HIV Wasting Syndrome ('Slim Disease') – profound involuntary weight loss plus either chronic diarrhea or chronic weakness and fever.

Two clinical conditions are commonly associated with AIDS. The first, Pneumocystis carinii pneumonia (PCP), is the most common infection occurring in AIDS patients and has occurred in 50% of cases in Canada. In the U.S., intravenous drug users present even more frequently with Pneumocystis carinii pneumonia (Koplan et al., 1985). PCP is caused by a parasite which does not cause pneumonia in normal, healthy persons. Other infections commonly seen include candida (a yeast) and herpes virus. The second condition, Kaposi's sarcoma, occurs in 25% of AIDS patients in Canada. It is a cancer of the skin that in the past was most common amongst elderly persons of Italian or Jewish descent. It usually presents as a purplish or reddish-blue lesion in the skin.

ii) Classification of HIV Infections

Most media reports continue to use the term AIDS-related complex (ARC) to describe persons that are ill with HIV infection but that do not meet all the criteria of full blown AIDS. Using this terminology, patients testing positive for HIV antibodies that did not meet the definition of ARC were classified as "asymptomatic". Because of the lack of specificity of these categories, they are being replaced by the classification outlined in Appendix A. These include the following--when a positive HIV antibody test is present:

Group I: Acute infection
    A mononucleosislike syndrome.

Group II: Asymptomatic infection
    No symptoms.

Group III: Persistent generalized lymphadenopathy (PGL)
    Enlarged lymph nodes at two or more sites other than in the groin, for more than three months in the absence of another cause.

Group IV: Other HIV disease
    This group is divided into subgroups including: infections and cancers resulting

from the HIV infection, diseases of the nervous system, and "constitutional disease" which includes symptoms such as fever, diarrhea and weight loss. Patients meeting all the criteria for the diagnosis of AIDS are classified within one of the subgroups of Group IV.

The signs and symptoms of early HIV infection can be as varied as: 1) extreme malaise and fatigue, 2) fever, 3) night sweats, 4) weight loss (greater than 10 lbs. in 2 months), 5) diarrhea, 6) yeast infections of the mouth, 7) enlarged lymph nodes, and 8) psychiatric symptoms such as depression and impaired mental function. Of course, any or all of these symptoms may be associated with a variety of other illnesses.

In addition to a positive test for HIV antibodies, laboratory test results in patients with HIV infection may include: 1) reduction of T-4 (helper) lymphocytes (white blood cells), 2) variable changes in T-8 (supressor) lymphocytes, 3) decreased T-4/T-8 ratios, and 5) abnormalities in other blood tests.

iii) Outcome For Persons With Early HIV Infections

Because the incubation period for the virus can be delayed (2 months to 5 years or even longer)(National Advisory Committee on AIDS, 1985), the precise number of persons with early HIV infections that will develop full blown AIDS is not known. The U.S. National Academy of Sciences estimated that 25-50% of these people will develop AIDS (Time, 1986e). However, many investigators now suspect that early HIV infections are stages in an irreversible progression to AIDS (Committee on a National Strategy for AIDS, 1986).

3.2 HIV Antibody Test

There is no lab test for AIDS. The commonly available test measures antibodies formed by the body as a result of exposure to HIV.[2]

Current evidence indicates that most persons with a positive HIV antibody test carry the virus and can transmit the infection. As opposed to most other infections, a positive test *does **not** indicate a person is protected* from HIV infection in the future (Alberta Social Services and Community Health, 1986). Also, false positive tests can occur and are a real possibility in persons with a positive test but no clinical evidence or history of exposure to HIV infection (Saag & Britz, 1986).

A negative HIV antibody test usually means the person has not been exposed to the virus and is not carrying it. However, following recent exposure to the virus, antibodies may not yet have developed since antibodies may not be present until 6 weeks or more after exposure to the virus. Also, false negative tests can occur. Therefore, a negative test does not always assure that a person is not infectious.[3]

Much controversy continues to centre around the question of routine HIV antibody testing (Miller et al., 1986; Krapfl, 1986). Due to the limited benefits and the need for careful interpretation, it is unlikely that the limited introduction of routine testing introduced by the U.S. Government will soon become common. Because involuntary testing may discourage members of high risk groups from seeking medical care and therefore prevent early diagnosis and treatment, it could do more harm than good. However, voluntary testing of groups such as homosexual and bisexual men is encouraged and voluntary testing of IV drug users has been recommended (World Health Organization [WHO], 1986).

Isolation or culture of HIV from blood or body fluids is a direct test for the presence of the virus. This test is expensive and not yet commonly available.

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[2] Because of the complexity of the entire issue of HIV antibody testing, the Alberta Provincial Advisory Council on AIDS has prepared a booklet, "Information for Health Care Providers on the HIV/LAV Antibody Test". Details include: test interpretation, who should be tested, advantages and disadvantages of testing for the patient, confidentiality, and counselling (Alberta Social Services and Community Health, 1986).

[3] Both of the commonly used tests for antibodies to the AIDS virus: the ELISA (enzyme linked immunosorbent assay – used for initial screening for the presence of antibodies) and the Western blot (used to confirm ELISA tests that are uncertain), can give false positive and false negative results (J. of the Am. Med. Assoc., 1985). Therefore, considerable clinical judgment is required in interpreting lab tests for HIV infection.

4. Methods of Transmission

4.1 Sexual

Despite the seriousness of the illness, AIDS is relatively difficult to transmit (Lagone, 1985; Waters, 1985b). It is primarily transmitted by sexual contact, but, while "typical" venereal diseases require "minimal" body contact, the AIDS virus needs a specific means of entry into the blood stream. Abrasions and tissue tears, which probably occur quite frequently during anal intercourse, can provide such entry. In this respect, its transmission is similar to that of the hepatitis B virus, among homosexuals.

Regarding heterosexual transmission of HIV, there are well documented cases of infection resulting from vaginal as well as anal intercourse and of spread from female-to-male, as well as male-to-female (Med. Post, 1986k, 1986s; Redfield et al., 1985, 1986). However, the "relative efficiency of various type of sexual transmission is not known" (Time, 1986e).[4] The virus has been isolated from both the vaginal and cervical secretions of women whose blood was HIV antibody positive (Med. Post, 1986i). This information supports other evidence for female-to-male transmission. Efficient male-to-female transmission is suggested by the fact that of eight women artificially inseminated with HIV infected donor semen, four became infected (Morgan & Nolan, 1986).

4.2 Blood

Intravenous drug users who share infected needles and syringes provide the virus direct access to the blood, as can other use of dirty needles and syringes. Administration of infected blood transfusions and blood products also provides the virus direct access to the blood stream.

In Canada and the U.S., there is *no* risk of getting AIDS from giving blood to the Red Cross because sterile equipment and disposable needles are used.

Transmission has occurred as a result of direct contact between an infected person's blood and the abraided skin or the mucous membranes of three health care workers (Curran, 1987). Therefore, particular precautions need to be taken when drawing blood or working with blood in a laboratory. Any direct contact with another person's blood should be avoided whenever possible.

4.3 Ordinary Social or Occupational Contact

A study published in the New England Journal of Medicine seems to confirm accumulating information that AIDS is not spread by close social contact. From the study of 101 people living in close but nonsexual contact with AIDS patients, it was concluded that even in an intimate household setting, the risk of catching AIDS is "minimal to non-existent". Only one contact, a child, developed AIDS – probably contracted before birth (Friendland et al., 1986).

No confirmed cases of HIV infection have resulted from kissing. Current public health policy considers social kissing a safe activity but "deep" kissing of questionable safety. The precise role of saliva in the transmission of HIV infection remains to be elucidated (Med. Post, 1987e).

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[4] The anatomical and cellular structure of the vagina possibly makes spread during vaginal intercourse less likely than during anal intercourse, since trauma is less frequent and the cells are more sturdy (Lagone, 1985; Med. Post, 1986b).

Employees are naturally concerned about contracting AIDS from fellow workers. In addition parents are concerned about their childrens' safety at school and the public in general often fears coming in contact with an HIV infected person or even someone in a high risk group. The conclusion of the U.S. Surgeons General's Report (see Section 8.2) – that AIDS is not transmitted by casual social contact or by usual occupational contact – is supported by a growing body of information.

In particular, there is no evidence that children can contract HIV infection from infected fellow students or from teachers. The routine safety procedures that are prescribed for teachers and daycare workers for handling bodily fluids of all children are sufficient when dealing with an AIDS-infected child.

The U.S. Centers for Disease Control has issued guidelines allowing health care workers and food handlers with AIDS antibody positive results to return to work.

The details of the necessary safety procedures in various workplace situations, are available from the appropriate governmental departments. (See Section 9 for specific information regarding health care professionals.)

4.4 Insects

Newspaper reports have suggested that the high incidence of AIDS in Belle Glade, Florida resulted from transmission by mosquitoes (Calgary Herald, 1985). An insect vector was virtually ruled out when investigators failed to find HIV infection within households (excluding sexual partners) or among children and adults over 60 (Med. Post, 1986y). Heterosexual transmission may account for many of the cases with no apparent risk factor. Also, although evidence for the AIDS virus was found in more than 50 insects from two Central African countries, similar epidemiological findings to those in Belle Glade argue against insect transmission (Med. Post, 1986x). A 1987 report prepared by the U.S. Congressional Office of Technology Assessment concluded ''If insect transmission is occurring at all, each case would be a rare and unusual event.'' (Calgary Herald, 1987). However, some researchers still express concern that insects could transmit the AIDS virus (Leishman, 1987).

5. Risk Groups

Homosexual and bisexual men are the group best delineated and at highest risk to contract AIDS. Intravenous drug users are the other major high risk group. Heterosexual partners of infected persons are also at high risk. Persons who received blood products and blood transfusions before testing for AIDS was instituted are at a much lower risk. The risk to the general heterosexual population in North America is low but cannot be ignored.

Children born to infected mothers are at high risk because of possible transmission of the virus at or shortly before the time of birth. Transmission by breast milk from an infected mother has also been reported, however, household contact does not result in spread (see Section 4.3).

Most information on the transmission of HIV infection refers to AIDS only, because it is the consistently reportable disease. The same principles, however, also apply to the lesser HIV infections.

5.1 Homosexual and Bisexual Males

Sexually active homosexual and bisexual men still account for the majority of AIDS cases in both Canada (82%) and the U.S. (73%). However, HIV infection is not specifically a disease of homosexuals. It is a sexually transmitted disease which can be spread non-sexually through contact with the blood or body fluids of an infected person. Apparently, in North America, once the homosexual population was infected, because of efficient transmission, the infection spread widely.

Bisexual men are of particular concern. Because they may be sexually involved with both men and women, they could contribute significantly to the spread of HIV from the homosexual to the heterosexual population. Many bisexual men, particularly those that are married, are not open about their homosexual behavior. As a result, they may increase their risk of contracting HIV infection by having sex with male prostitutes or other anonymous partners. Also, these men are probably not reached through preventive education programs directed at the homosexual community.

Factors associated with high risk have included:
(Waters, 1985b; Ebbesen et al., 1984; Newell et al., 1985)

- multiple partners (the greater the number of sexual partners, the greater the risk)
- anonymous sexual partners
- history of syphilis or hepatitis
- use of nitrates (''poppers'')
- certain sexual practices
  - fisting (insertion of the fist into the anus)
  - rimming (anal-lingual contact)
  - anal intercourse

In the Vancouver AIDS study, an increased risk of AIDS was found among homosexual men with a greater number of sexual contacts in AIDS-endemic areas, including San Francisco, Los Angeles, and New York (Boyko et al., 1986). However, no association was found between insertive or receptive oral-genital contact and the development of a positive HIV-antibody test (Schechter et al., 1986). These results support the impression in the literature that oral sexual activity does not play a major role in the transmission of HIV, however, current public health policy is to encourage the use of condoms during oral-penile contact.

5.2 Heterosexually Active Persons

There is increasing evidence that significant spread of HIV is occurring in the North American heterosexual population. However, in their report, the authoritative U.S. National Academy of Sciences cautiously states "there is a broad spectrum of opinion on the likelihood of further spread of HIV infection in the heterosexual population" (Time, 1986e). In July 1987, the number of cases of AIDS in the heterosexual population in the U.S. was 1,448 (4%). The percentage has remained consistent for several years (Waters, J. Personal Communication, 1987).

In Canada, the risk classification "heterosexual partners of individuals at risk," accounted for 2% of AIDS cases (National Advisory Committee on AIDS, 1986). (Dr. Norbert Gilmore, head of Canada's National Advisory Committee on AIDS states "The basic concept is if your partner is infected, you are at risk.")(Calgary Herald, 1986b). To date, heterosexual spread has not been a major factor in Canada because few people are infected outside the main risk group of homosexual and bisexual men (Calgary Herald, 1986b).

These estimates do not predict a rapid heterosexual spread of HIV infection in North America, however, extensive future spread is potentially possible unless precautions are taken now.

The most disconcerting information regarding the potential for heterosexual spread of HIV infection comes from Central African countries and Haiti. In these countries AIDS has spread more widely than in North America and Europe,[5] and appears to be spread primarily by heterosexual contact. Men and women are affected in roughly equal numbers; whereas in the U.S. men outnumber women by 13 to 1 (Time, 1986d). Also, infected males in Central Africa and Haiti had greater numbers of different heterosexual partners and more frequently had regular contact with female prostitutes (Clumeck et al., 1985a).

Female prostitutes are suspected to be an important human reservoir of HIV in the heterosexual population in these countries.[6] Similar concerns about female prostitutes in North America have centered around potential HIV infection from intravenous drug use which is prevalent in this group. However, at least one study of infected African prostitutes found no history of intravenous drug use, suggesting significant sexual transmission per se (Clumeck et al., 1985a). Of particular concern regarding infected prostitutes are the results of studies suggesting that female-to-male transmission of HIV may be just as efficient as that from male-to-female (Med. Post, 1986s).

It is not clear that the major heterosexual spread of HIV seen in Africa will be duplicated in North America. Numerous hygienic and other factors differ between the countries. Also, a similar spread of other blood borne infections like hepatitis B has occurred in Africa, further suggesting that the African pattern of HIV infection may not occur in North America or Europe (Waters, J. Personal Communication, 1987).

How seriously the situation is being taken is indicated by the U.S. Surgeon General's recent report about heterosexual spread of HIV infection and the fact the British Government has instituted a major educational effort directed at heterosexuals as well as homosexuals and intravenous drug users.

Risk factors for heterosexual spread of HIV infection include: sexual intercourse (anal or vaginal) with a person infected with HIV, and multiple partners (the greater the number of sexual partners the greater the risk). Sexual intercourse with a prostitute is becoming a very high risk activity particularly in areas of the U.S. and in Central Africa and Haiti.

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[5] Incidence of exposure to HIV (i.e. positive blood test for HIV antibodies): Kigali (capital of Rwanda) – 18% of inhabitants studied; Lusaka, Zambia – 16% of a group of young adults; Kampala, Uganda – 13.6% of 1,000 pregnant women studied; Haiti – nearly 10% of tested blood donors (Time, 1986d). Some scientists doubt the magnitude of these figures and question the suitability of blood tests developed in the West for use on populations in other parts of the world where different blood characteristics may produce misleading results. Nevertheless, there is much wider spread of HIV infection than in the U.S.

[6] Incidence of HIV antibodies in African female prostitutes: Rwanda – 80% (67 of 84) (Clumeck et al., 1985b). Kenya – 54% of prostitutes from Nairobi slums (Time, 1986d). One study also found that 24% (10 of 42) of African women with AIDS or ARC were "professional prostitutes" (Clumeck et al., 1985a).

5.3 Intravenous (IV) Drug Users

The possibility that an IV drug user is infected with the AIDS virus is of particular concern to addiction workers. It is reassuring to know that by July 1987, in Canada, there were still only five *reported* cases of AIDS in the IV drug abuse category.

In the U.S., IV drug users continue to be the second largest group at risk for AIDS. In July, 1987 they accounted for 16% of AIDS cases (60% in New Jersey (Time, 1986b)). Also, a variable but often high percentage of IV drug users continue to show evidence of exposure to HIV.[7]

In Europe, the number of reported cases of AIDS among IV drug users (319) increased in three months during 1986, from 12% of AIDS cases to 14% (WHO, 1986).

In addition to the five cases of AIDS reported in Canadian IV drug users, 4% (31 of 987) of homosexual/bisexual AIDS patients also reported the use of IV drugs. And, as 13% of 15 "healthy" IV drug users tested in 1985 were HIV antibody positive (Neumann et al., 1986), a possible reservoir of HIV infection is present. Therefore, although the number of AIDS cases among IV drug users in Canada remains very low – considering the situation in the U.S. and the possibility that a reservoir exists – an increasing number of cases is likely to occur.

Among IV drug users, the use and sharing of non-sterile needles and syringes is the major risk factor for the spread of HIV infection. However, as the importance of heterosexual spread of AIDS becomes more evident, "sexual intercourse (anal or vaginal) with an infected person", becomes a significant risk factor in this already high risk population.

Other drugs, such as alcohol and "poppers" (butyl nitrate), are known to be immunosuppressants, therefore, heavy use could increase the risk of developing AIDS (Niven, 1985). A number of studies support the possible association of AIDS and the use of "poppers"(Ebbesen et al., 1984; Med. Post, 1986e).

5.4 Recipients of Blood Transfusions and Blood Products

The probability of developing AIDS as a result of receiving a blood transfusion or blood products in North America has always been very low. The implementation of blood donation screening for antibodies to HIV by both the Canadian and American Red Cross Societies in 1985 further decreased this risk.

In the U.S., at least one patient has been infected with HIV as a result of transfusion with blood testing negative for HIV. The donor apparently was recently infected but had not yet developed antibodies, which were present on later testing (Calgary Herald, 1986a). Such a possibility continues to be of concern to blood banks, so all individuals in high risk groups are requested not to donate blood (Med. Post, 1986w).

5.5 Others

i) Children Born of Mothers Infected With AIDS Virus.

Children are a risk group of special concern. Of the 217 cases of AIDS in children under the age of 13 reported in the U.S. by 1986, most probably contracted the disease from their mothers (Can. Family Physician, 1986b). Transmission of the virus may occur during pregnancy, during labour and delivery, or perhaps shortly after birth. Up to 65% of infected mothers transmit the disease to their newborn children and a single case has been reported of infection through breast milk (Pinching & Jeffries, 1985).

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[7] In various geographic areas, IV drug users have shown high incidence of exposure to HIV (i.e. tested positive for HIV antibodies): Edinburgh, Scotland – 38-50% (J. of the Addiction Research Foundation, 1986a); England – 1.5-6.4%; West Germany – 6%; Italy – 20.3-22.5%; Switzerland – 32-42%; Austria and Spain 44-48% (Med. Post, 1986c); Canada – 13% (Neumann et al., 1986).

Of the 17 Canadian children with AIDS, 14 had a parent at high risk of HIV infection and 3 had received a blood transfusion. Twelve (70%) have died (Can. Med. Assoc. J., 1986b).

In response to this situation, the U.S. Centers for Disease Control has issued a series of recommendations for counselling, testing and treating women at risk of infection both before and during pregnancy (Can. Family Physician, 1986b). Screening for HIV antibodies is recommended for high risk women including: IV drug users, prostitutes, women from areas where heterosexual transmission is thought to play a major role, and those who have been sexual partners of infected men or men in a high risk group. Until more information becomes available, women at high risk of infection are encouraged to *postpone pregnancy.*

ii) Persons From Areas Where HIV Infection is More Prevalent.

Currently, Central African countries and Haiti are known to be high risk areas, particularly regarding heterosexual transmission of the AIDS virus. Other areas may be included as HIV infection spreads and as more information becomes available regarding current infection statistics. Whereas Haitian immigrants fall within this group, they are no longer considered a separate high risk category.

6. Prevalence

6.1 The Disease AIDS

Although the numbers continue to increase, the following table includes reported cases to November, 1987.

Prevalence of AIDS

	Alberta	Canada	U.S.A.
Number of Cases	82	1345	44,757
Number of Deaths	44	703	25,644
% In Various Risk Groups:			
Homosexual and bisexual	84.3	82.3	73.7
Heterosexual contact	1.4	2.3	3.8
Blood/blood products	10.0	4.6	3.0
I.V. drug abuser	0.0	0.4	16.4
From AIDS endemic area	n/a	5.4	n/a
Children of high risk parents	2.9	2.1	n/a
Other/unknown	1.4	2.9	3.0
Projected number of cases – 1991		6,500	270,000

n/a – not available

The number of AIDS cases continues to increase steadily. However, the doubling time, now somewhat longer than 1 year, has been gradually lengthening. In early 1987, the number of AIDS cases in the U.S. was projected to double in 13 to 15 months, and by 1991 was projected to double in a two-year period (Morgan & Curran, 1986).

The projected number of cases by 1991 in Canada (6,500) is considerably less than the 20,000 or more previously estimated. The number remains proportionately lower than that projected for the U.S. (270,000) but is still large. In 1991, in the U.S., it is estimated 54,000 people will die from AIDS and the direct health care costs will be $8 – $16 billion.

In Toronto, in 1985, AIDS was the number one cause of death in the 35 to 44 year age group (Edmonton Sun, 1986).

An attempt has been made to bring a perspective on the possibility of dying from AIDS. In 1985, it was estimated that for men or women in the U.S., who are heterosexual, who don't take drugs intravenously, and who aren't hemophiliacs requiring transfusions, the chances of contracting AIDS are less than one in a million. In contrast, the chances of dying in a car accident are about one in 5,000; of being murdered, one in 10,000; and of being struck by lightning, one in 600,000 (Lagone, 1985).

Nevertheless, in 1985, Dr. Cate Hankins, a member of Canada's National Advisory Committee on AIDS, estimated that in 1991, among Canadian men aged 20-49, nearly 271,000 years of potential life will be lost due to AIDS, compared to 127,000 for road accident deaths. That is, in 1991 deaths from AIDS in this group could have more than twice the impact on society than deaths from motor vehicle accidents (Med. Post, 1985c).

Thus, although at present the chances of most persons contracting AIDS are low, it is forecast to have very serious effects on society.

6.2 HIV Infection

Estimates for 1987 of the number of persons infected with HIV: U.S. – 2 million, Africa – 5 million (Newsweek, 1986), world – 5 to 10 million (Time, 1986d). Even more staggering are the estimates for 1991: U.S. – 5 to 10 million (Newsweek, 1986), world – 100 million (Time, 1986f). It is generally accepted that there are 50 to 100 infected persons for each active case of AIDS, however, there have been no studies to confirm these figures (Med. Post, 1987d).

No comparable estimates are available for Canada. One study, however, did show that 21% of 701 healthy homosexual men and 13% of intravenous (IV) drug users were HIV antibody positive (Neumann et al., 1986). These limited findings indicate the possibility of a high prevalence of HIV infection in these two groups of the Canadian population.

In the U.S., HIV infection has been reported in 22-65% of asymptomatic gay men, and 1.5-50% of IV drug users (Romanowski, 1986). The prevalence of HIV antibodies in the general population in the U.S. is estimated to be 1 in 225.

7. Treatment

7.1 Drug

The current approaches to the "medical" treatment of HIV infections include: 1) antiviral therapy, 2) attempts at immune stimulation and reconstitution and, 3) treatment of the specific malignancies and infections associated with AIDS. With or without treatment, in 1987 AIDS continued to be a fatal disease. Few patients survive longer than 3 years from the time of diagnosis (National Advisory Committee on AIDS, 1986).

To date, the most promising HIV antiviral drug is zidovudine – formerly named azidothymidine (AZT).[8] It has received considerable publicity (Time, 1986c; Calgary Herald, 1986c, 1986f) since a study in the U.S. was interrupted before completion, because a significantly greater number of deaths occurred in the placebo (non-drug treatment) group. Zidovudine is not a cure for AIDS but "appears to be at least temporarily effective in decreasing mortality and morbidity in some patients with AIDS or ARC" (Med. Letter, 1986). Much remains to be learned about zidovudine, including how long treatment must be continued and how toxic it is – particularly in causing marked bone marrow depression and severe anemia.

Several other antiviral drugs continue to be tested[9] as are a number of immune enhancing drugs (Shepherd, 1986; Drug Protocol, 1986). To be most effective, an antiviral drug will probably have to be used with therapy that helps to reconstitute the immune system. Four drugs being studied that increase the number of certain immune cells include: alpha-interferon, interleukin-2, IMPREG-1 and isoprinosine (Lagone, 1985).

Patients often respond to antibiotic treatment for the specific infections and anti-cancer treatment for the cancers associated with AIDS. However, because of continued immune system depression they frequently develop other fatal infections (National Advisory Committee on AIDS, 1986).

Other approaches to treatment have yielded varying responses. The initially exciting results obtained by French workers with the drug cyclosporine have not been supported by longer term studies. Cyclosporine may still be of help in persons with HIV infections that have not yet progressed to AIDS (Am. Family Physician, 1986).

In desperation, some people with AIDS have tried various unconventional treatments. They include: high doses of Vitamin C (Med. Post, 1986m), acupuncture, macrobiotic diets (Med. Post, 1986o), lifestyle management programs and the new antiviral drug ribavirin, available in Mexico (Calgary Herald, 1986d). None of these treatments are of proven value in the treatment of HIV infection. However, proper nutrition, exercise, a positive mental attitude, and healthy lifestyle and environment could all contribute to improved health and will certainly do no harm.

7.2 Counselling

Counselling is a very important component of the treatment for persons with AIDS and other HIV infections – as well as for those in high risk groups. Not only are they dealing with a fatal disease, many must deal with their homosexuality and others with their severe drug addiction. Supportive counselling and drug treatment programs should be available as well as appropriate information about preventing the spread of the infection. The American Medical

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[8] Zidovudine is one of the nucleoside analog drugs. It is structurally similar to the nucleoside thymidine which is part of the cell's natural genetic material. Zidovudine differs enough, however, to block viral replication by acting as a false building block in the synthesis of DNA, inhibiting the action of reverse transcriptase, a key HIV enzyme. Newer nucleoside analog drugs, including dideoxycytidine and dideoxyadenosine, are also being tested (Drug Protocol, 1986).

[9] They include: HPA-23 (the mineral compound used in Paris to treat actor Rock Hudson), ribavirin (a flu drug), ansamycin (an Italian antibacterial drug), suramin (a drug commonly used to treat parasitic disease like African sleeping sickness), and trisodium phosphonoformate (a Swedish herpes drug) (Lagone, 1985;. Med. Post, 1986d).

Society on Alcoholism and Other Drug Dependencies has specifically recommended that chemical dependency treatment should always be offered to HIV-infected clients who require it.

Supportive counselling should include: crisis intervention for AIDS clients and potential AIDS clients (Lopez & Getzel, 1984), and understanding of the discrimination experienced because of the disease and their life-style (Crovella, 1985). Also, assistance is often required to help these clients obtain the most from Community services – medical, financial and psycho-social – and to deal with the whole subject of death and dying.

Addiction counsellors should be particularly sensitive to issues relating to sexuality since a significant number of AIDS patients are chemically dependent. Also, gay men have been shown to engage in more high risk sexual activity when using alcohol or other drugs in association with sex (Jewell, L.D., Personal communication, 1987). This probably applies to heterosexually active persons as well, so the subject of AIDS and sexuality in general should be an integral part of addiction treatment.

Since some workers have calculated that as many as 30% of persons with drinking problems are homosexual (Israelstam & Lambert, 1983), all addiction counsellors should be familiar with the problems and needs of gay clients. When appropriate, referrals should be made to available resources and services such as gay/lesbian AA groups as well as to programs that focus specifically on AIDS and other HIV infections.

The social dimension of AIDS treatment is receiving increasing attention in the literature (Siegel, 1986; Cohen & Weisman, 1986; Carter, 1986). Specific information has been directed to nurses (Crovella, 1985; Coleman, 1986) and family physicians (Stapleton, 1986), and the special needs of intravenous drug users (Shine, 1985).

Some general points for consideration by counsellors are included in Appendix C.

8. Prevention

Until a vaccine becomes available, the only prevention against AIDS is to avoid coming in contact with the virus. Governments are placing increasing emphasis on informing the public (heterosexual as well as homosexual) about the importance of the use of condoms during (start to finish) sexual intercourse (vaginal as well as anal). As well, intravenous drug users are being encouraged to use clean, previously unused needles and syringes. (See Section 9 for a discussion of prevention issues relating more specifically to health care and other helping professionals.)

8.1 Vaccine

A major advance in dealing with HIV infection will be the development of a vaccine. The goal of the U.S. Public Health Service is "to have within the next few years an effective vaccine to protect people at risk of infection with HTLV-III, the virus that causes AIDS." (Dowdle, 1986).

The development of a vaccine will be facilitated by the "unparalleled" speed of research advances on AIDS (Calgary Herald, 1986e) which "is rapidly resulting in the accumulation of significant new information about the molecular biology of HIV" (Med. Post, 1986r). Also, the isolation of a "harmless relative" of the AIDS virus (Time, 1986a) and work with the virus used in smallpox vaccinations (Can. Family Physician, 1986a) are promising developments, building on earlier studies (Med. Post, 1986a; 1986g).

On the other hand, constant mutation of the virus (Newsweek, 1986) and the various aspects of its structure (Med. Post, 1986u) continue to delay vaccine development. A discouraging recent report from the U.S. Institute of Medicine suggests "it would take at least five years just to test such an AIDS vaccine" once one is produced (Newsweek, 1986).

8.2 U.S. Surgeon General's Report

The U.S. Surgeon General's very explicit AIDS report (1986) states:

> "Unless it is possible to know with *absolute certainty* that neither you nor your sexual partner is carrying the virus of AIDS, you must use protective behaviour. *Absolute certainty* means not only that you and your partner have maintained a mutually faithful monogamous sexual relationship, but it means that neither you nor your partner has used illegal intravenous drugs."

The report also states:

> "Do not have sex with prostitutes. ...male and female...",

More encouragingly, it states:

> "Casual *social* contact such as shaking hands, hugging, social kissing, crying, coughing or sneezing, will not transmit the AIDS virus. Nor has AIDS been contracted from swimming in pools or bathing in hot tubs or from eating in restaurants (even if a restaurant worker has AIDS or carries the AIDS virus). AIDS is not contracted from sharing bed linens, towels, cups, straws, dishes, or any other eating utensils. You cannot get AIDS from toilets, doorknobs, telephones, office machinery, or household furniture. You cannot get AIDS from body massages, masturbation or any non-sexual contact."

Also:

> "None of the identified cases of AIDS in the United States are known or are suspected to have been transmitted from one child to another in school, day care, or foster care settings."

8.3 Educational Campaigns

Education is a crucial component in any attempt to prevent the spread of HIV infection. This is no simple matter when dealing with a subject as personal and controversial as sexuality. Worldwide, a variety of approaches are being employed.

In Canada, the Canadian Public Health Association has developed a national public education program. As well, Health and Welfare Canada has strengthened and consolidated its activities into one agency called the Federal Centre for AIDS (FCA). As the first step in a comprehensive public education program, the province of Alberta has recently published a pamphlet called "The Facts on AIDS". Most other Canadian provinces are also implementing educational programs.

The British government launched a $20-million AIDS-awareness blitz in November, 1986, with very explicit posters and ads in national and youth newspapers and on radio and TV, as well as with leaflets delivered to every home (Med. Post, 1987b). The program has met some opposition as certain clergymen have maintained "...that chastity is the only answer to the AIDS problem and state that advocating the use of condoms would only lead to an increase in the same type of promiscuity that they believe created the problem in the first place."(Med. Post, 1987a)

Despite opposition and controversy it is vital that effective educational programs be initiated, if the spread of HIV infection is to be contained.

8.4 Condoms

Until recently there was little information available about the effectiveness of the condom as a viral barrier (Voeller & Potts, 1986). Initial studies indicated that both latex (rubber) and animal membrane condoms prevented the passage of the AIDS virus (Med. Post, 1986l; 1986aa). However, more recent studies suggest that natural (animal membrane) condoms are *not* effective. These studies confirm the effectiveness of latex condoms (Med. Post, 1986bb).

Condoms do fail, with a commonly cited "use failure rate" of 10%. This is significantly reduced if they are used properly, e.g.: from start to finish during intercourse. Regardless, they do *not* offer perfect protection; a Consumers Union study found significant leakage in some brands and variable degrees of deterioration in a third of the 21 rubber brands tested (Voeller & Potts, 1986).

Until further information is available, latex condoms containing the spermicide nonoxynol-9 (which has been shown to kill the AIDS virus) are being recommended as a preventive measure against the transmission of the AIDS virus.

8.5 Intravenous (IV) Drug Users

Prevention of the transmission of AIDS by intravenous drug users is becoming an international concern. Dr. Forest Tennant, the director of several drug treatment clinics in California, suggests that the AIDS epidemic should supersede every other drug issue, with the number one priority being "to do everything we can to get people off needles."(J. of the Addiction Research Foundation, 1986b). He emphasizes the fact that many prostitutes are IV drug users, therefore they could contribute to further spread of AIDS into the heterosexual population.

Recent studies have confirmed the belief that the IV drug using group engaged in needle sharing – in one study, during 40% of their drug-use episodes (Street Pharmacologist, 1986). In response to this situation, drug users in Britain (J. of the Addiction Research Foundation, 1986c), Australia (Med. Post, 1986v), and Amsterdam (Buning et al., 1986) are being provided with free needles and syringes. In the U.S., the State of New Jersey is also supplying free syringes on an experimental basis (Medicine Hat News, 1986). Opponents fear "that by providing clean needles, the state would only encourage drug use; a greater threat to public health than AIDS itself."(Time, 1986b). Current U.S. state laws forbidding sale of syringes without a prescription and stringent prescribing regulations may be contributing to the high incidence of AIDS. Conversely, much easier accessibility to needles and syringes may contribute to the lower incidence of AIDS amongst Canadian IV drug users. It is encouraging that in Amsterdam, the number of IV drug users did not increase during 1985 when 100,000 syringes and needles were provided in an exchange program of new for used equipment (Buning et al., 1986).

An additional approach to IV drug users that continue to inject drugs is to encourage them to sterilize their "equipment". Programs in San Francisco and New York offer specific information at the "street level" and some are distributing vials of household bleach with sterilizing instructions. These programs are apparently being well accepted by drug users (Am. Psyc. Assoc. Monitor, 1987).

A New York study indicates that drug users there are aware of the danger of AIDS and concerned about using clean needles and syringes (Med. Post, 1986n). However, 46% said they had not changed their pattern of sexual activity, so a real need for education exists, particularly regarding the use of condoms (Shine, 1985).

During 1986, a conference, "Consultation on AIDS among drug abusers", was held by the World Health Organization and attended by 12 European countries, Canada, and the United States (WHO, 1986). Conclusions and recommendations of the consultation include:

1) "High priority must be given to the consideration of HIV infection in local, national and international drug abuse programmes".

They suggest:

- emphasis be placed on the provision of psycho-social care, that personality changes and/or dementia may appear before other symptoms of HIV infection and that people may respond to the knowledge of infection by increasing their drug use.
- alternative channels of referral to treatment be expanded, including outreach workers.
- counselling on the safe use of needles and safe sex practices become a routine component of the standard treatment package.

2) "Every means available should be used to continue informing and educating the public, including intravenous drug abusers, their families and sexual partners, and those who are experimenting with drugs or are at particular risk of becoming involved in drug abuse."

They recommend that both the media and the personal approach (such as organizations of drug users) be employed.

3) "Emphasis was placed on the need for cooperation between the people concerned with HIV infection and AIDS and those concerned with drug abuse."

It was suggested that other authorities such as the legal services and the police should be included in consultations.

4) "Efforts should be made to persuade those entering drug programmes to be tested <for antibodies to HIV>."

5) "..., apart from one country, the consensus was that needles and syringes should not be denied to the drug abuser."

6) "Most participants agreed that a flexible attitude was needed towards <the use of methadone substitution> and that it should be available within an overall treatment package."

9. AIDS and Health Care Professionals

Although the following discussion relates specifically to health care workers, this information is important for everyone – particularly other helping professionals.

The subject of AIDS and the health care worker has been discussed by various authoritative groups (Jessamine, 1986; Mason, 1986; Med. Post, 1986h). They agree that AIDS has stimulated considerable controversy and concern in the media and amongst the general public. Naturally, health care workers have expressed fear of contracting AIDS.

The risk of transmission appears to be low, but *the infectious nature of the syndrome does call for strict compliance with infectious disease control procedures.* Worldwide, only a small number of health care workers have been infected with HIV as a result of occupational exposure. This information, plus the report concluding that the risk of catching AIDS in intimate household settings is "minimal to nonexistent"(Friendland et al., 1986), should allay many of the concerns expressed by health care workers.

The most likely method of transmission would be by contact with blood and other body fluids, as occurs with hepatitis B. Current knowledge suggests that patients who have AIDS or are HIV positive can therefore be cared for safely using the same blood and body fluid precautions as those used for patients with hepatitis B (Waters, 1985a).

It is important for health care workers, and for other helping professionals to apply blood and body fluid precautions to *all* patients/clients. Attempts to limit these precautions to members of high risk groups only gives a false sense of security to the worker and could lead to even more discrimination against members of high risk groups. It is also important that employers, particularly those in the health care field, develop protocols which supply guidelines for dealing with the entire subject of AIDS and in particular outlining specific precautions for handling blood and body fluids. As part of an ongoing commitment to meet the needs of its staff, the Alberta Alcohol and Drug Abuse Commission has prepared an AIDS Resource Manual which includes a detailed section: Infection control guidelines for handling HIV infections in AADAC facilities.

The Canadian National Advisory Committee on AIDS feels that "HTLV-III (HIV) infected health care workers do not represent a risk to others through the provision of health care". Consistent with this conclusion, the U.S. Centers for Disease Control (CDC) has issued guidelines for infected health care workers (Med. Post, 1986f).

There are no known cases of transmission of HIV from tears or saliva, however, the virus has been isolated from both of these body fluids. Since dental personnel are at high risk for contracting hepatitis B, appropriate comparable precautions are recommended for dealing with AIDS patients (Parker, 1985). Guidelines have also been issued for preventing possible transmission from tears (Can. Med. Assoc. J., 1986c).

In summary, the need for strict compliance with infectious control procedures continues to be very important. By mid 1987, six health care workers had been infected with HIV as a result of needle sticks and three by contact of infected blood with abraided skin (Curran, 1987). However, none of 32 staff members, bitten or severely scratched by an AIDS patient in a Montreal hospital, have become infected (Med. Post, 1986t). Nor have two nurses who participated in mouth-to-mouth resuscitation with an ARC patient, or a person bitten deeply by an AIDS patient (Drummond, 1986).

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Appendix A:

CDC Classification of HIV Infection

Group I: Acute infection

Mononucleosislike syndrome associated with a positive HIV antibody test.

Group II: Asymptomatic infection

Positive HIV antibody or viral culture. May be subclassified on basis of laboratory evaluation (CBC, platelet count, T-cell subset studies).

Group III: Persistent generalized lymphadenopathy

Palpable lymph nodes (>1 cm) at two or more extrainguinal (other than in the groin) sites for more than three months in the absence of a concurrent illness or infection to explain the findings. May be subclassified on the basis of laboratory evaluation (see above).

Group IV – Other HIV disease

Subgroup A: Constitutional disease

One or more of the following: fever or diarrhea persisting more than one month or involuntary weight loss greater than 10% of baseline; and absence of a concurrent illness or infection to explain the findings.

Subgroup B: Neurologic disease

One or more of the following: dementia, myelopathy, or peripheral neuropathy; and absence of a concurrent illness or condition.

Subgroup C: Secondary infectious diseases

Infectious disease associated with HIV infection and/or at least moderately indicative of a defect in cell-mediated immunity.

Category C-1

Symptomatic or invasive disease due to one of 12 specified diseases listed in the surveillance definition of AIDS: *Pneumocystis carinii* pneumonia, chronic cryptosporidiosis, toxoplasmosis, extraintestinal strongyloidiasis, isosporiasis, candidiasis (esophageal, bronchial, or pulmonary), cryptococcosis, histoplasmosis, mycobacterial infection *(Mycobacterium avium complex or M. kansasii),* cytomegalovirus infection, chronic mucocutaneous or disseminated herpes simplex virus infection, and progressive multifocal leukoencephalopathy.

Category C-2

Symptomatic or invasive disease due to one of six other specified diseases: oral hairy leukoplakia, multidermatomal herpes zoster, recurrent Salmonella bacteremia, nocardiosis, tuberculosis, and oral candidiasis (thrush).

Subgroup D: Secondary cancers

Diagnosis of one or more cancers known to be associated with HIV infection as listed in the surveillance definition of AIDS and at least moderately indicative of a defect in cell-mediated immunity: Kaposi sarcoma, non-Hodgkin's lymphoma (small, noncleaved lymphoma or immunoblastic sarcoma), or primary lymphoma of the brain.

Subgroup E: Other conditions in HIV infection

Clinical findings or diseases, not classifiable above, that may be attributable to HIV infection and are indicative of a defect in cell-mediated immunity; symptoms attributable to either HIV infection or a coexisting disease not classified elsewhere; or clinical illnesses that may be complicated or altered by HIV infection. These include chronic lymphoid interstitial pneumonitis and constitutional symptoms, secondary infectious diseases, and neoplasms not listed above.

Adapted from: United States Centers for Disease Control. (1986). Classification system for human T-lymphotropic virus type III/lymphadenopathy-associated virus infections. *Morbidity and Mortality Weekly Report, 35,* 334.

Appendix B:

Case Definition of AIDS

For surveillance purposes, AIDS is defined by the presence of reliably diagnosed disease(s) considered at least moderately indicative of an underlying cellular immune deficiency.

Diseases Indicative of AIDS	Required Clinical Features
A. Protozoal/Helminthic Infections	
Cryptosporidiosis	Diarrhea > 1 month
Pneumocystis carinii pneumonia	Pneumonia
Strongyloidosis	Pneumonia, CNS or disseminated infection
Toxoplasmosis	Pneumonia, CNS infection
Isosporiasis (a)	Diarrhea > 1 month
B. Fungal Infections	
Candidiasis (b)	Esophageal or visible bronchial infection
Cryptococcosis	Pulmonary, CNS or disseminated infection
Histoplasmosis (a)	Disseminated (not confined to lungs or lymph nodes)
C. Bacterial Infections	
Atypical mycobacterial infection	Disseminated (not confined to lungs or lymph nodes)
D. Viral Infections	
Cytomegalovirus	Pulmonary, GI or CNS infection
Chronic mucocutaneous herpes simplex	Infection persisting > 1 month or pulmonary, GI or disseminated infection
Progressive multifocal leukoencephalopathy	
E. Cancer	
Kaposi's sarcoma (c)	
Lymphoma of brain	
Non-Hodgkin's lymphoma (a)	High-grade pathologic type and of B-cell or unknown immunologic phenotype

F. Other

Chronic lymphoid interstitial pneumonitis in a child under 13 years of age is indicative of AIDS unless tests for HIV are negative.

Lymphoreticular malignancy diagnosed more than 3 months after the diagnosis of one of the opportunistic diseases used as a marker for AIDS will *no longer be excluded* as cases.

(a) Requires serologic or virologic evidence of HIV infection.

(b) Bronchial infection requires serologic or virologic evidence of HIV infection.

(c) In patients over 60 years of age requires virologic or serologic evidence of HIV infection.

NOTE: Patients will be excluded as AIDS cases if they have a negative HIV antibody test and do not have a low number of T-helper lymphocytes or a low T-helper to T-suppressor ratio. In the absence of test results, patients satisfying all other criteria in the definition will continue to be included.

Adapted from: United States Centers for Disease Control. (1985). Revision of the case definition of acquired immunodeficiency syndrome for national reporting – United States. *Morbidity and Mortality Weekly Report, 34,* 373-375.

Appendix C:

Dealing with HIV Infected Clients

1) Clients with AIDS and other HIV infections must not be denied the special care they need.
2) Do not panic or become unduly upset by media reports.
3) Obtain reliable information and learn the real facts about AIDS and related illnesses.
4) Carefully follow all established guidelines: AIDS is an infectious disease. Basic precautions include frequent handwashing and avoidance of client's blood or body fluids.
5) Consult your supervisor or another staff member if the disease, gay persons, or intravenous drug users cause particular stress for you.
6) Clients suspected of having AIDS or another HIV infection (particularly members of high risk groups with health problems) should be referred to a physician.
7) When appropriate involve AIDS specific services.
8) Remember death and dying counselling may be part of the care needed.

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